

**REMARKS**

Claims 2-7, 11-17 and 20-23 are pending. The applicants acknowledge the withdrawal of finality of the previous action and the reopening of prosecution on the merits. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claims 2, 6, 7, 11, 17, 20 and 21 were rejected under 35 USC 103(a) as being allegedly unpatentable over Eizenhöfer, U.S. Patent No. 4,763,322 in view of Robbins, U.S. Patent No. 5,293,633. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Applicants first note that in making the obviousness rejection, the Examiner is necessarily admitting that the primary reference, Eizenhöfer, fails to teach or suggest all the claimed features of independent claims 2, 11 and 20. However, in only one instance, e.g. in connection with claim 20, does the Examiner indicate which features are alleged not to be taught by Eizenhöfer, e.g. features such as the claimed intermediate frequency control input. Accordingly, in addressing the rejection with regard to claims 2 and 11, as well as with regard to claim 20, applicants will provide a detailed analysis of which features are missing from the primary reference.

Applicants further note that the Examiner has attempted to combine Eizenhöfer and Robbins with no evidence provided of a teaching, suggestion or motivation to support the combination despite an explicit teaching away in Robbins. Applicants therefore submit that the applied art combination is improperly motivated and will provide a more detailed explanation in the following remarks.

The Examiner alleges that Eizenhöfer teaches a multi-carrier transmitter, however a close review of Eizenhöfer fails to reveal a multi-carrier transmitter and instead refers consistently to single carrier for practicing the invention disclosed therein, which relates to establishing time slots of different durations on a single carrier. Applicants note that Eizenhöfer indicates **only conditionally** that if a large number of channels are needed, different frequency carriers may be used and the channel allocation scheme described therein can be duplicated on each carrier. However, the invention of Eizenhöfer is directed to a time division scheme **on a common RF carrier** (see, e.g. col. 4, line 68 – col. 5 line 1; col. 5, line 38, and elsewhere) and no detailed description of a multi-carrier transmitter sufficient to read on features the claimed invention is taught or suggested.

Applicants note that, despite the Examiner's characterization, Eizenhöfer fails to disclose the claimed multiplexer control circuit. In attempting to establish a correspondence between the features of Eizenhöfer and the claimed multiplexer control circuit, the Examiner alleges that coupler 13 amounts to the claimed multiplexer control circuit. Applicants strongly disagree with this characterization. A close review of the description reveals, importantly, that coupler 13 is **an antenna coupler** and not a multiplexer control circuit as alleged. Specifically, coupler 13 is optional and **is not required** for base stations with less than 32 channels (see, e.g. col. 7, line 65). The claimed multiplexer control circuit is specifically recited as selecting between a first and second data encoder according to a predetermined transmit schedule. Coupler 13 of Eizenhöfer does not perform such a function.

Assuming, *arguendo*, that the multiplexing of data into a TDM slot can be considered selecting between a first and second data encoder according to a predetermined transmit schedule, Eizenhöfer still fails to disclose that the first data encoder is **selected more frequently** than the second data encoder in order to control a predetermined target power delivered to a receiver.

The Examiner's rationale is flawed with regard to reading the claimed feature of selecting the first data encoder more frequently than the second data encoder in order to control a predetermined target power delivered to a receiver on a description of dynamic allocation of time slots and the optimal allocation of time slot durations according to bandwidth requirements. The claimed feature has the important advantage not previously appreciated in the art of increasing the efficiency of the downstream power amplifier by more than 20% as described in paragraphs [00019] and [00027] of applicants' specification. In other words, by selecting between a first and second data encoder for transmission according to a predetermined transmit schedule and further as claimed, the extreme input swings associated with transmitting multiple signals simultaneously can be avoided, the efficiency of the downstream power amplifier can be increased, and the complexity and thus the expense of the downstream power amplifier can be reduced.

It should be noted that in accordance with the cited West German Patent DE-PS No. 31 05 199 (which incidentally the Examiner has failed to cite in a PTO form 892 while relying on a teaching therefrom) the dynamic allocation of time slots is still fixed with regard to a particular user and access session. That is, a fixed number of timeslots are allocated to a user during an access depending on the number of slots needed. However, it is important to note that the method described in the West German Patent is specifically noted as being unsuitable for critical data transfer such as communications and thus is irrelevant to the claimed invention. Further, the description in Eizenhöfer relates only to dividing a fixed 20msec TDM frame into *fixed* slots of different durations and assigning one of the fixed slots having a particular duration to a user based on the bandwidth demand of that user. It is critical to note that *the duration of the slot cannot be changed once it is assigned*. When considering the nature of Eizenhöfer in this regard and when considering that Eizenhöfer teaches transmitting the TDM frame on a single

carrier, it is clear that Eizenhöfer fails to teach the basic conditions for the claimed invention, e.g. a multicarrier transmitter that includes, *inter alia*, a multiplexer control circuit that selects between a first data encoder and a second data encoder according to a predetermined transmit schedule that is configured to select the first data encoder more frequently than the second data encoder in order to deliver a predetermined target power delivered to a receiver as claimed.

With regard to claim 20, the Examiner admits that several key features specific to claim 20 are not taught or suggested in Eizenhöfer such as the claimed multiplexer control circuit coupled to an intermediate frequency control input and the features of asserting an intermediate frequency selection signal and generating the transmit signal output at one of the preselected transmit frequencies, however several key features are overlooked, which applicants submit are also not taught or suggested. Applicants submit that it is improper for the Examiner to consider in isolation the features of (excerpt from Office Action at page 4, line 6) “a control circuit coupled to --- **an intermediate frequency control input**, --- to assert an intermediate frequency selection signal, --- to generate the transmit signal output at one of the preselected transmit frequencies” since key interrelations between additional features are overlooked.

For example, the claimed multiplexer control circuit is coordinated by *a transmit schedule* to assert an intermediate frequency selection signal, *a transmit frequency selection signal and a multiplexer control signal for selecting from each of the first and second transmit data inputs to generate the transmit signal output at one of the preselected transmit frequencies*. Accordingly, the generation of the transmit signal output also relies on the transmit schedule, which coordinates the assertion of three signals, e.g. the intermediate frequency selection signal, the transmit frequency selection signal and the multiplexer control signal for selecting from each of the first and the second transmit data inputs. The Examiner further appears to completely ignore the feature explicitly recited in claim 20, e.g. that the claimed

transmit schedule *provides a non-uniform time division between the selection of the first and second transmit data inputs in order to control the target power delivered to a receiver.*

The Examiner appears to have applied Eizenhöfer in a piecemeal fashion in an attempt to find some of the features of the claimed multiplexer control circuit and not others, yet, to properly find obviousness, the features must be present in the applied reference or combination of references *in the manner claimed*. To do otherwise is a classic indication of the application of improper hindsight, e.g. use of the applicants' specification as a road map to piece together isolated aspects of the prior art in a wishful attempt to arrive at the invention.

Applicants submit that Eizenhöfer in failing to teach the features admitted as missing by the Examiner, must necessarily fail to teach or suggest any of the interrelated features of, for example, the claimed multiplexer control circuit. The missing features from the multiplexer control circuit necessarily render the claimed circuit inoperable as to the features that are allegedly taught.

In attempting to cure some of the deficiencies of Eizenhöfer, the Examiner presents Robbins as allegedly teaching, for example, the claimed multiplexer control circuit of claim 2 and corresponding method of claim 11, e.g. selecting the first data encoder more frequently than the second data encoder in accordance with the transmit schedule to control a predetermined target power delivered to a receiver. Robbins further allegedly teaches, for example, the multiplexer control circuit of claim 20, e.g. coordinated by a transmit schedule to assert an intermediate frequency selection signal, the transmit frequency selection signal and the multiplexer control signal for selecting from each of the first and the second transmit data inputs and the provision of a non-uniform time division between the selection of the first and second transmit data inputs in order to control the target power delivered to a receiver.

In making these assertions, the Examiner first fails to indicate where in Robbins the missing features are taught. Secondly, there is absolutely no evidence provided of a teaching, suggestion or motivation to support the combination of references. Third, the secondary reference teaches away from the primary reference and the claimed invention.

In Eizenhöfer, a fixed length TDM frame of 20 msec is divided into timeslots of different duration for transmission over a single RF carrier. In the cable television system of Robbins, audio data is embedded in discrete single FM carriers. More importantly, Robbins contains an explicit teaching away from use in a TDM system (Robbins, at col. 3 line 14 to line 20, specifically teaches that “discrete carriers be used rather than full video channels *with time division multiplexing (TDM)*[emphasis added].”). In also teaching away from a multi-carrier implementation, Robbins further teaches away from the claimed invention. Still further Robbins has little value in combination with Eizenhöfer in making up for the noted deficiencies in Eizenhöfer as there is no disclosure of the claimed multiplexer control circuit.

Accordingly, a *prima facie* case of obviousness has not been established in that 1) the applied art combination is improperly motivated; 2) the references teach away from each other and from the claimed invention; and 3) the applied art combination, even if properly motivated and/or even if not containing an explicit teaching away, fails to teach or suggest all the claimed features of the invention. For at least these reasons, the rejection should be withdrawn as to independent claims 2, 11 and 20.

Claims 17 and 21, by virtue of depending from claims 11 and 20 are allowable for at least the reasons set forth herein above with regard to claims 11 and 20. The rejection of claims 17 and 21 should therefore be withdrawn.

Claims 3, 4 and 12-14 were rejected under 35 USC 103(a) as being allegedly unpatentable over Eizenhöfer in view of Robbins and further in view of Judd et al., U.S. Patent No. 6,701,137. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claims 3, 4 and 12-14, by virtue of depending from claims 1 and 11 are allowable for at least the reasons set forth herein above with regard to claims 1 and 11. The rejection of claims 3, 4 and 12-14 should therefore be withdrawn. Claims 3, 4 and 12-14 are independently allowable in that, for at least the reasons set forth herein above, the applied art combination, with regard to Eizenhöfer and Robbins is improperly motivated. The addition of Judd et al. fails to cure the deficiency and may also be improperly motivated.

Claims 5, 15 and 16 were rejected under 35 USC 103(a) as being allegedly unpatentable over Eizenhöfer in view of Robbins and further in view of Martone et al., U.S. Patent No. 6,603,806. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claims 5, 15 and 16, by virtue of depending from claims 1 and 11 are allowable for at least the reasons set forth herein above with regard to claims 1 and 11. The rejection of claims 5, 15 and 16 should therefore be withdrawn. Claims 5, 15 and 16 are independently allowable in that, for at least the reasons set forth herein above, the applied art combination, with regard to Eizenhöfer and Robbins is improperly motivated. The addition of Martone et al. fails to cure the deficiency and may also be improperly motivated.

Claims 22 and 23 were rejected under 35 USC 103(a) as being allegedly unpatentable over Eizenhöfer in view of Robbins and further in view of Fujiki et al., U.S. Patent No.

6,847,807. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claims 22 and 23, by virtue of depending from claim 20 are allowable for at least the reasons set forth herein above with regard to claim 20. The rejection of claims 22 and 23 should therefore be withdrawn. Claims 22 and 23 are independently allowable in that, for at least the reasons set forth herein above, the applied art combination, with regard to Eizenhöfer and Robbins is improperly motivated. The addition of Fujiki et al. fails to cure the deficiency and may also be improperly motivated.

In view of the foregoing, the applicants submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

If there are any problems with the payment of fees, please charge any underpayments and credit any overpayments to Deposit Account No. 50-1147.

Respectfully submitted,



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Robert L Scott, II  
Reg. No. 43,102

Posz Law Group, PLC  
12040 South Lakes Drive, Suite 101  
Reston, VA 20191  
Phone 703-707-9110  
Fax 703-707-9112  
Customer No. 23400